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Youth and transferable skills

An evidence gap map

September 2015

Evidence
Gap Map
Report 2

Education



International
Initiative for
Impact Evaluation

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The International Initiative for Impact Evaluation (3ie) is an international grant-making NGO promoting evidence-informed development policies and programmes. We are the global leader in funding and producing high-quality evidence of what works, how, why and at what cost. We believe that better and policy-relevant evidence will make development more effective and improve people's lives.

3ie evidence gap map reports

3ie evidence gap maps are thematic collections of information about impact evaluations or systematic reviews that measure the effects of international development policies and programmes. The maps present a visual overview of existing and ongoing studies in a sector or sub-sector in terms of the types of programmes (or interventions) evaluated and the outcomes measured. The evidence gap map reports provide all the supporting documentation for the maps themselves, including the background information for the theme of the map, the methods and results, including the protocols, and the analysis of the results.

About this evidence gap map report

This report provides the supporting documentation for the youth and transferable skills evidence gap map, which was developed as part of a project funded by the MasterCard Foundation and the MacArthur Foundation. The evidence gap map is a key input into the paper, 'The state of evidence on the impact of transferable skills programming on youth in low- and middle-income countries'. This report presents analysis of the evidence gap map alone. All of the content is the sole responsibility of the authors and does not represent the opinions of 3ie, its donors or its Board of Commissioners. Any errors and omissions are also the sole responsibility of the authors. Any comments or queries should be directed to the corresponding author Kristen Rankin at Kristen.Rankin@gmail.com.

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3ie staff and independent consultants prepared the evidence gap map under the direction of Kristen Rankin and Drew Cameron, with overall supervision provided by Annette N Brown.

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Executive summary

Transferable skills, also referred to as soft skills and life skills, provide youth with the tools and confidence to succeed in terms of employment, health and personal well-being. This report summarises the findings of an evidence gap map on transferable skills programming for youth in low- and middle-income countries, as part of a project funded by the MasterCard Foundation and the MacArthur Foundation. Evidence gap maps created by the International Initiative for Impact Evaluation are visual representations of how much impact evaluation evidence exists for a given sector or policy issue according to the types of programmes evaluated and outcomes measured.

The youth and transferable skills evidence gap map contains 90 completed impact evaluations coded across 24 intervention categories and 15 outcome categories. The framework for the map was developed through a consultative process involving stakeholders from several agencies and organisations. The 90 impact evaluations yield 609 occurrences in the map, reflecting that many studies evaluate multiple interventions (or programmes that combine elements of multiple intervention categories) and many others measure effect sizes for outcomes across multiple outcome categories.

We present extensive analysis on the evidence we found, looking at not only the interventions used and outcomes measured but also at the methodology, location, considerations of gender and out-of-school youth and more.

The greatest prevalence of evidence is for skills courses at school, which are limited-time, special topic additions to the school day. There are also impact evaluations for a wide range of alternative learning pathways, such as peer-to-peer approaches. The most common outcomes measured are related to individual learning and behaviour. We found only one study that measures outcomes at the institutional level. This report provides an overview of this analysis, while a related scoping paper discusses the evidence base on a deeper level as well as the wider literature on this subject.

By exploring the clusters of existing evidence as well as the gaps, we suggest promising questions for research synthesis and priority questions for future impact evaluation investments. Promising questions include skills courses at school and transferable skills training combined with technical vocational education and training outside of the classroom. Priority questions for future impact evaluation investments include other kinds of transferable skills programming connected to the formal education system as well as testing of learner-centred interventions targeted to transferable skills.

We conclude that there are multiple gaps of evidence in categories important to stakeholders. While ongoing studies are beginning to focus on transferable skills more directly, ultimately more evidence is needed on this topic in low- and middle-income countries.

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Abbreviations and acronyms

3ie	International Initiative for Impact Evaluation
L&MICs	Low- and middle-income countries
NGO	Non-governmental organisation
R4D	Results for Development Institute
TVET	Technical vocational education and training
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund

1. Introduction

1.1 Background

Policymakers, programme implementers and educators recognise that the skills a young person needs to succeed in today's world go beyond technical know-how in an employment setting. With 1.8 billion young people in the world today, world leaders are calling for greater and more strategic investment in this population, particularly in low- and middle-income countries (L&MICs), to allow them to reach their full potential (UNFPA 2015). Transferable skills, also referred to as soft skills and life skills, provide youth with critically needed tools to be able to succeed in terms of employment, health and personal well-being.

While the terminology varies, we use the term 'transferable skills' to encompass the higher-order cognitive skills and non-cognitive skills that individuals can use to be successful across different situations in work and in life. These skills are different from technical and vocational skills, which relate directly to specific occupations. We also distinguish them in this paper from basic cognitive skills like knowledge and comprehension and from foundational skills like literacy and numeracy.

The development of transferable skills can have effects on many aspects of life. In terms of employment, Kautz *et al.* (2014) highlight multiple programmes that found a correlation between the generation of transferable skills and various employment-related outcomes. Results for Development Institute (R4D) recently surveyed a wide variety of employers in Africa and Asia in order to determine which skills are important (2014). They found a convergence across regions of the importance of non-cognitive skills alongside basic cognitive skills and technical skills for employers. They also found a 'crucial importance of non-cognitive skills for the informal economy' (R4D 2014, p.19) for countries in these regions.

While much of the literature on transferable skills focuses on employment, transferable skills are also considered valuable beyond the labour market. Fan (2011), for example, defines such skills as those that, once acquired or developed, can be transferred into different vocational or non-vocational areas, such as personal or group life. Transferable skills are important in terms of educational outcomes as well. Farrington *et al.* (2012) review the evidence on the connection and find the strongest evidence on the relationship of academic behaviours, mind-sets and learning strategies to academic performance. They also find a correlation between perseverance and academic performance, although causality is hard to assign. Havard, Hughes and Clarke (1998) and Gibbs *et al.* (1994) speak of skills that university students need to become successful learners and practitioners, as well as to be successful in other aspects of life.

As international agencies and governments are increasingly funding and implementing programmes to build transferable skills for youth, more high-quality evidence is needed to inform those decisions and designs. There is a growing body of evidence on the effectiveness of transferable skills interventions in developed countries, but existing literature reviews identify only a small number of rigorous evaluations of interventions in L&MICs (Kautz *et al.* 2014; González-Velosa, Ripani & Rosas Shady 2012).

This 3ie evidence gap map examines the evidence base for the impact of transferable skills interventions for youth on individual, community and institutional outcomes in L&MICs.

1.2 Evidence gap maps¹

3ie evidence gap maps are thematic collections of information about studies that measure the effects of international development policies and programmes. The maps present a visual overview of existing and ongoing studies in a sector or sub-sector in terms of the types of programmes (or interventions) evaluated and the outcomes measured. The maps include hyperlinks to summaries of included studies. Evidence gap maps have two main objectives:

(1) To facilitate evidence-informed decision making in international development policy and practice by providing a user-friendly tool for accessing evidence and thereby enabling policymakers and practitioners to quickly and efficiently explore the findings and methods used to arrive at those findings for the existing evidence on a topic.

(2) To facilitate strategic use of scarce research funding and enhance the potential for future evidence synthesis by identifying key 'gaps' in the available evidence, thus indicating where future research should be focused.

A key feature of the evidence gap map is the framework of interventions and outcomes developed based on a review of the policy literature and consultation with stakeholders. The rows of the framework represent the key interventions of a particular sector, while the columns cover the most relevant outcomes structured along the causal chain, from intermediate outcomes to final outcomes, and cost-effectiveness. The framework is designed to capture the universe of important interventions and outcomes in the sector or sub-sector covered by the map.

Depending on the objectives of the gap map, it may include either impact evaluations or systematic reviews, or both. As explained above, impact evaluations are evaluations that use counterfactual analysis to measure the net impact of an intervention. When we say 'evidence' in this report, we are speaking primarily of these measured net impacts. Systematic reviews are review studies that employ systematic search and screening processes to identify appropriate studies for synthesis.

The evidence gap map framework forms a matrix, which is then populated with links for the studies that provide evidence for each cell's intervention and outcome combination. These links take the user either to the study's record in the 3ie Impact Evaluation Repository or the 3ie Systematic Review Database, or directly to the source material if the study is not complete or the paper is still in draft form. Another key feature of the map is that each study is placed in every cell for which the study provides evidence. That means that most studies appear in the map multiple times as most studies measure multiple outcomes and even

¹ The text in this section is adapted from Vojtkova, M, Stevenson, J, Verboom, B, Prasannakumar Y, Olapade, M, Snilstveit, B and Davies, P 2014. *Evidence gap maps of productive safety nets for extreme poverty*. Report for USAID, International Initiative for Impact Evaluation (3ie): New Delhi.

evaluate multiple interventions (or interventions that cross over multiple categories). This feature provides the user with a visualisation of the full evidence base.

The 3ie evidence gap map approach draws on the principles and methodologies from existing evidence mapping and synthesis products. A full overview of the methodology can be found in Snilstveit *et al.* (2013).

1.3 Objectives

As international agencies and governments are increasingly focusing on transferable skills for youth, more high-quality evidence is needed to inform those decisions and designs (UNESCO 2015; R4D 2013). There is a large body of evidence from developed countries, but existing literature reviews identify only a small number of studies of interventions in L&MICs (Kautz *et al.* 2014; González-Velosa, Ripani & Rosas Shady 2012). The objective of this evidence gap map is to catalogue the impact evaluations of transferable skills interventions in L&MICs and to analyse the evidence base. The evidence gap map is also a primary input into a scoping paper titled 'The state of evidence on the impact of transferable skills programming on youth in low- and middle-income countries', which explores what the existing evidence finds and discusses priorities for future investments in evaluation and synthesis.

1.4 Methods

The process for developing an evidence gap map begins with determining the scope of the map. We developed the framework – the matrix of interventions and outcomes – based on documents from major funders and implementers interested in transferable skills amongst youth, including UNESCO, UNICEF and the World Bank. We also conducted a workshop hosted by the MasterCard Foundation to brainstorm the items in the framework. These interventions were then grouped based on mechanisms and setting. We shared several iterations of the framework with staff at MasterCard and MacArthur and received valuable feedback. After we began coding the included studies in the framework, we decided to refine the framework further to better reflect the interventions as described in the studies.

We revised the framework again in response to feedback from the roundtable event hosted as part of the youth and transferable skills project. The last revision focused on better labelling and ordering of the interventions and outcomes and so did not require an updated search. We present the framework in the next section of this report.

The next step for developing an evidence gap map is to search a chosen set of resources and to screen the results in order to determine which studies will be included. These processes are guided by a search strategy and a screening protocol, presented in appendix A. Using the search strategy (table A1) we searched 21 indices and databases, 34 websites and 4 research registries, all of which are listed in table A2. We searched for general terms connected to skills and age, combining terms such as youth development, socio-emotional, life skill or non-formal education with youth-focused terms such as adolescent, young adult or after school. In each database we searched the indexed terms and used thesauri when available to capture other articles related to our search terms. The search was conducted in January and February of 2015.

After we cleaned the search results of duplicates, we used the screening protocol, first to screen results by title and abstract and second to screen the full texts of the articles. Title and abstract screening was conducted in EndNote, using keywords to facilitate the search. We present the search and screening results in section 3 of this report.

The next step is to code the included studies and populate the map. The coded information includes bibliographic details for the study, the interventions (from the framework) that the study evaluates and the outcomes (from the framework) that the study measures. The outcome categories for this map include four crosscutting designations: whether the study measures outcomes over the long run, whether the intervention targets a specific gender or the study presents gender-specific evidence for that intervention, whether the study includes cost-effectiveness analysis for that intervention, and whether the intervention targets early school leavers. At least two researchers screened each study that passed to the full-text stage, and a second researcher verified the coding for each study.

1.5 Report structure

In section 2 of this report, we present the scope of the youth and transferable skills evidence gap map. In section 3 we present the findings, which include the search and screening results and an analysis of the characteristics of the evidence base. Section 4 discusses limitations, and section 5 concludes. Appendix A includes the detailed methodological information, and appendix B presents the full bibliography of included studies.

2. Scope of evidence gap map

2.1 Interventions

The scope of an evidence gap map is defined by the intervention categories included, the outcomes categories included and the types of studies selected. Table 1 presents the intervention categories for each group along with the code used in the evidence gap map.

Table 1: Intervention categories

Formal education	
FE1	Teacher training programmes and curriculum reform
FE2	Teacher networking and support
FE3	Teacher incentives
FE4	Skills courses at school
FE5	Institutional management and capacity building
Extracurricular activities	
EC1	Student clubs, groups and associations
EC2	Career counselling and job fairs
Pedagogy	
PM1	Learner-centred teaching
PM2	Experiential and participatory learning
Skills training	
ST1	Transferable skills training
ST2	TVET and transferable skills combined training
ST3	Foundational and transferable skills combined training

Work placement	
WP1	Job-matching, apprenticeship and internship programmes
WP2	Public and community services programmes
WP3	Military-style programmes
Alternative learning pathways	
AL1	Media and edutainment
AL2	Community centres and civil society groups
AL3	Distance learning
AL4	Mentoring, tutoring and coaching
AL5	Peer-to-peer learning or peer encouragement
AL6	Parent or family involvement
AL7	Therapy and transferable skills
Financial support	
FS1	Education-related financial support and services
FS2	Job-related financial support and services

The first grouping of intervention categories covers programmes that take place within the context of formal schooling. The first category is ‘teacher training programmes and curriculum reform’ (FE1). Here we include continuing education and professional development programmes for school teachers that are meant to improve teaching methods and to enable the reinforcement of transferable skills as part of the regular curricula. We do not include here all the programmes that include some element of training of the trainers only in order to deliver the programme’s curriculum. Curriculum reform here means that schools adopt a comprehensive transferable skills curriculum as part of their regular programme, for example, a social development curriculum. The second category, ‘teacher networking and support’ (FE2), includes interventions that are meant to increase teachers’ ability and motivation to reinforce transferable skills by increasing their peer engagement and support. The third category, ‘teacher incentives’ (FE3), includes interventions that are designed to increase teachers’ motivation to build their own capacity and to teach transferable skills by offering them incentives.

The fourth category in the formal education group, ‘skills courses at school’ (FE4), includes all the special topic, limited-time courses or workshops that are taught at school during regular school hours. These courses may include a significant information component, but they also seek to build transferable skills. One example is a tobacco prevention program in schools in India. The program sought to ‘change multiple intra-personal factors (e.g., knowledge, meanings, skills) and social-environmental factors (e.g., social norms) known to be related to tobacco use among urban Indian youth’ (Stigler *et al.* 2011) using classroom activities, posters and peers. The fifth category, ‘institutional management and capacity building’ (FE5), includes interventions designed to introduce transferable skills into schools through school management capacity building or institutional reform. These programmes work with administrators, whereas those under the first category work with teachers.

The next group of interventions includes extra-curricular activities that have the building of transferable skills as one objective. The interventions in these categories take place in schools for students but are extra-curricular in two ways: they happen outside of regular

school hours and they do not have a structured curriculum. They may have a teacher, trainer or counsellor who facilitates, but they do so without a curriculum. Those programmes that happen at schools outside of regular school hours and do have a curriculum would fall under skills training programmes. The first extra-curricular category (EC1) encompasses student clubs, groups and associations. The second category (EC2) captures those interventions that provide career counselling or job fairs in a school setting.

The third group in the map includes two pedagogical methodologies. Most, if not all, of the studies coded here should be cross-coded in at least one other intervention category, since these pedagogies are not programme types but rather methods used within programmes. 'Learner-centred teaching' (PM1) makes students active agents in deciding their curriculum or activities. The focus is more on the process of learning and less on the specific curriculum. 'Experiential and participatory learning' (PM2) emphasises learning by doing, but in contrast to learner-centred teaching, uses a pre-defined curriculum. Students learn and practise behaviours and skills using activities such as classroom presentations, group work, role-playing and field trips. This category includes the Vivian Paley 'storytelling curriculum' approach.

We created these two intervention categories in order to capture studies of programmes that highlight one or the other pedagogy as a key element of its approach. For example, Pulerwitz *et al.* (2015) test both a group education component, which includes several experiential learning methods, and a community engagement component of an intervention to change gender norms and reduce intimate partner violence in Ethiopia. We do not include here every programme that uses one of these pedagogies. In fact, a large share of the programmes identified use some aspect of experiential or participatory learning. Rather, we code a study here when it focuses on the pedagogical approach of the intervention.

We created the next grouping, 'skills training', to capture the large number of programmes – primarily implemented by non-governmental organisations (NGOs) – that provide structured training not in the classroom. These programmes can benefit students, early school leavers and young adults who have finished school. The first category, 'transferable skills training' (ST1), includes interventions that are focused exclusively on building transferable skills. An example of this is the Stepping Stones programme to improve sexual health in South Africa, which used participatory learning to build communication skills, awareness and critical reflection (Jewkes *et al.* 2008). The second category, 'TVET and transferable skill combined training' (ST2), encompasses interventions that address both transferable skills and specific vocational training. Bandiera *et al.* (2014), for example, tested a women's empowerment program in Uganda that combines training on income-generating activities with life skills training. The third category, 'foundational and transferable skills combined training' (ST3), reflects those interventions that target both transferable and foundational, or academic, skills. For example, the Questscope training product teaches traditional academic subjects combined with teaching techniques such as democratic decision making meant to build transferable skills (Morton & Montgomery 2012).

We have divided the 'work placement' group into three categories. 'Job-matching, apprenticeship and internship programmes' (WP1) are those where participants are placed in some kind of work in order to gain transferable skills in a work setting. 'Public and community service programmes' (WP2) are those that include some kind of public benefit

and the volunteer or public service element is part of the mechanism for learning transferable skills. We also include a category for military-style programmes (WP3). The obvious example is the Reserve Officers Training Corps in the United States. As with the vocational and technical categories, we only include studies if the interventions they evaluate specifically include a transferable skills element. One could argue that all work placement programmes provide experiential learning that builds transferable skills. We are interested in evidence about more direct mechanisms, however. An example of an included study is the de Azevedo, Davis, and Charles (2013) evaluation of *Ninaweza*, the Kenya Youth Empowerment Program, which included information and communication technology training, life skills training and internships.

The next grouping brings together a variety of alternative learning pathways. These use a mechanism different than those used in other categories (such as ‘media and edutainment’ [AL1] or ‘distance learning’ [AL3]) or engage a third party, such as mentors, peers or parents. Some of the interventions coded in one of these will appear in other rows as well. For example, the programme evaluated by Pulerwitz *et al.* (2015) in Ethiopia works with community groups and provides a transferable skills training programme. Even though both categories use one-to-one interaction, we separate ‘mentoring, tutoring and coaching’ (AL4) from peer-to-peer learning because researchers describe the mechanisms differently. To be coded as a ‘parent or family involvement’ (AL6) intervention, the programme needs to directly involve members of the youth’s household. We include a final category, ‘therapy and transferable skills’ (AL7) to capture the large number of interventions based on psychosocial therapy but where the stated objectives include building transferable skills.

The final grouping covers interventions that include some kind of financial support or services. These include matched savings accounts, group-based microfinance and stipends. We have divided these into interventions that support education or training (FS1) and interventions that support employment (FS2).

We designed the framework to differentiate interventions by mechanisms rather than by topics or skills types. This allows the reader to easily examine evidence according to theories of change about whether and how certain mechanisms achieve certain outcomes.

2.2 Outcomes

Table 2 presents the outcome categories, which are the columns of the evidence gap map.

Table 2: Outcome categories

Learning and behaviour	
LB1	Individual knowledge
LB2	Individual beliefs and attitudes
LB3	Observed transferable skills
LB4	Social participation and interaction
LB5	Health and safety behaviours
LB6	Livelihoods and employment behaviours
LB7	Criminality
Employment, livelihoods and demography	
EL1	Demography and health
EL2	Academic and schooling outcomes
EL3	Employment
EL4	Wages, income and assets
EL5	Other livelihoods measures
Institutions	
I1	Educational institutions
I2	Private sector
I3	Societal and political

The knowledge and beliefs and attitudes categories are fairly typical. Examples of knowledge measures from a drug use prevention study (Guo *et al.* 2010) are ‘knowing types of drugs’ and ‘understanding drug use consequences to health’, while an attitude indicator is ‘attitude to drug use’. We use the ‘observed transferable skills’ category (LB3) to capture the indicators, whether self-reported or observed, that reveal something about having acquired a skill instead of changing a belief. Many of these are indicators of self-efficacy, for example, ‘confidence in condom application’ or ‘comfortable asking my partner to use a condom’.

Individual behaviours, typically self-reported, are included in several of the learning and behaviour categories. We might see behavioural outcomes in ‘social participation and interaction’ (LB4), ‘health and safety behaviours’ (LB5), ‘livelihoods and employment behaviours’ (LB6) and ‘criminality’ (LB7). Examples of each, in order, are attendance at community group meetings, engaging in risky sex, saving money and hours spent in illicit activities.

In the second group of outcome categories, we include indicators that reflect the impacts of the learning and behavioural outcomes. ‘Demography and health’ (EL1) includes measures of the outcomes of health behaviours, for example, whether young women become pregnant or whether participants test positive for drug use or for a sexually transmitted infection. ‘Academic and schooling outcomes’ (EL2) include measures of academic outcomes, such as grades or test scores, and schooling outcomes, such as attendance.

‘Employment’ (EL3) encompasses indicators of whether someone is employed as well as the type of employment, for example, employment in the formal versus informal sector. ‘Wages, income and assets’ (EL4) includes indicators of these financial outcomes. An ‘other livelihoods measures’ (EL5) outcome example is the food security indicator in the Dunbar *et al.* (2014) study.

The final group of outcomes includes categories in which all the outcomes are measured at the institutional level. For example, the third category in this group, 'societal and political' (I3), captures indicators of social change at a group or community level, whereas the behavioural category 'social participation and interaction' (LB4) would capture an indicator of an individual's participation in a community group. The first category, 'educational institutions' (I1), includes school performance-type indicators.

2.3 Crosscutting themes

On the right side of the map, we coded information for crosscutting themes.² We include these columns so that readers can easily understand the size of the evidence base related to these areas and can find the relevant studies. The first column, 'measurement of long-term outcomes' (CC1), includes those studies that include a measurement of long-term outcomes. We did not choose a cut-off for the length of time after the completion of the intervention. Instead, we include studies here if they measure at baseline and then measure again sometime after the baseline. The gender-specific analysis (CC2) covers two possibilities: studies of interventions targeted only at young men or at young women and studies that report analysis separately for women and men. We do not include here studies that simply include a gender 'dummy' variable to control for possible gender effects.

The cost-effectiveness column (CC3) reveals how many studies provide information on cost-effectiveness. To be included, a study must have some information about programme cost that can be compared to one or more of the measured net impacts. Finally, stakeholders involved in developing the framework were interested in identifying programmes targeting early school leavers (CC4), possibly with an intention to get them back in school or to make up for missed school, as distinct from other non-students.

2.4 Study types

As noted above, this evidence gap map includes studies that are impact evaluations. Impact evaluations are defined as programme evaluations or field experiments that use experimental or observational data to measure the effect of a programme relative to a counterfactual that represents what would have happened to the same group in the absence of the programme. Impact evaluations may also test different programme designs, using one programme as a counterfactual, testing a change or alternative to that design and measuring the change in results. For example, Dunbar *et al.* (2014) sought to measure the effect of the addition of vocational training, micro-grants and social support components to an intervention of life skills and health education alone.

For this evidence gap map, we also searched and screened for applicable systematic reviews. Systematic reviews are review studies that report at least how the authors searched for included studies, state that the search was intended to be comprehensive and state the inclusion criteria used to judge which studies will be included or excluded. We identified a small number of systematic reviews that overlap with cells in the framework, and we include these in the bibliography of this report (appendix C). We ultimately decided not to code these studies into the map. In no case did an identified systematic review present evidence that

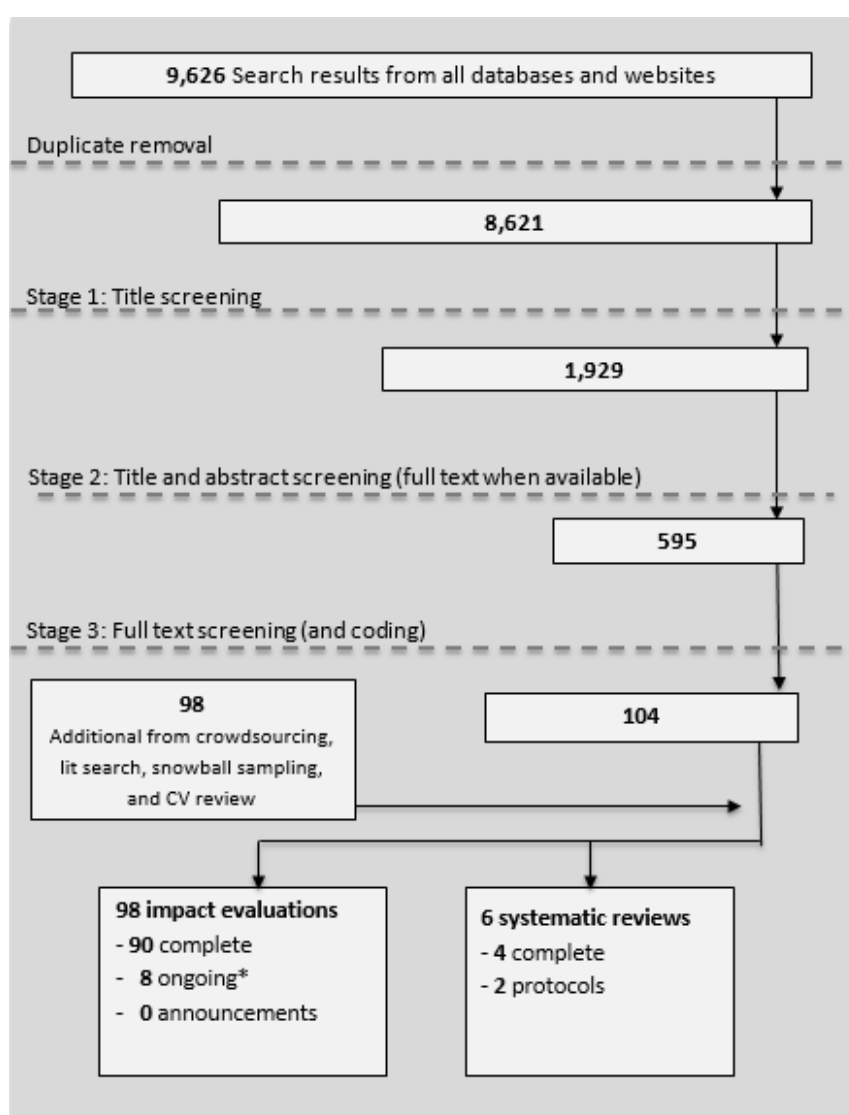
² The evidence gap map presented in table A2 does not include these four columns in the interest of space. We present the columns as a separately in table 3. The Excel workbook for the evidence gap map includes these four columns on the primary worksheet.

exactly fits in a cell. In some cases, the reviews covered populations outside the bounds of our map (children or adults). Other ‘mismatches’ include interventions that only peripherally address transferable skills and reviews including studies from high-income countries. Mapping overlapping but mismatched reviews into the framework would give the impression of more evidence than actually exists. We therefore decided to discuss the reviews in the report but not code them into the map.

3. Findings

Appendix A presents the table of resources searched, the detailed search strategy and the screening protocol. Figure 1 presents the search results.

Figure 1: Youth and transferable skills search results³



Source: Author Constructed

³ Ongoing impact evaluations were available in early draft format, as pre-registrations or with pre-analysis plans. Announcements were noted on primary authors' personal websites or curricula vitae.

In addition to the online searches, we conducted a peer recommendation search by sending requests to a number of researchers, donors and implementers for suggestions of existing impact evaluations and systematic reviews related to the theme as well as for information on ongoing studies.

We also conducted backwards and forwards snowball searches. The backwards snowball search involved screening the references of included studies. The forwards snowball search involved checking the online curricula vitae and websites of authors with at least one included study. We did the latter to increase the likelihood of finding draft papers or other documentation for ongoing studies. Due to the large number of health studies captured in our search and the preponderance of HIV-related studies that mention 'life skills' or other terms without necessarily addressing them, we did not place as great an emphasis on the snowballing process for these studies as we did with others. Rather, the snowballing process served as a secondary method to capture skills-focused articles across topics.

The search and screening resulted in 90 completed impact evaluations (a study is deemed completed if there is a complete report publicly available). Appendix B presents the bibliography of all the included impact evaluations, as well as all the ongoing and announced impact evaluations and all the completed and protocol-stage systematic reviews.

We present a picture of the evidence gap map as figure A1. The picture format shows the number of studies that provide evidence for each cell. The darker cells represent those with more evidence.

It is important to note that the map only shows where there is evidence, not what the evidence says. So it is incorrect to interpret a dark cell as meaning that there is a lot of evidence supporting a positive impact of the intervention on the outcome. The evidence may actually show negative effects or null effects, or be inconclusive. A dark cell does mean that there is a deeper base of evidence for the effect of that intervention on that outcome.

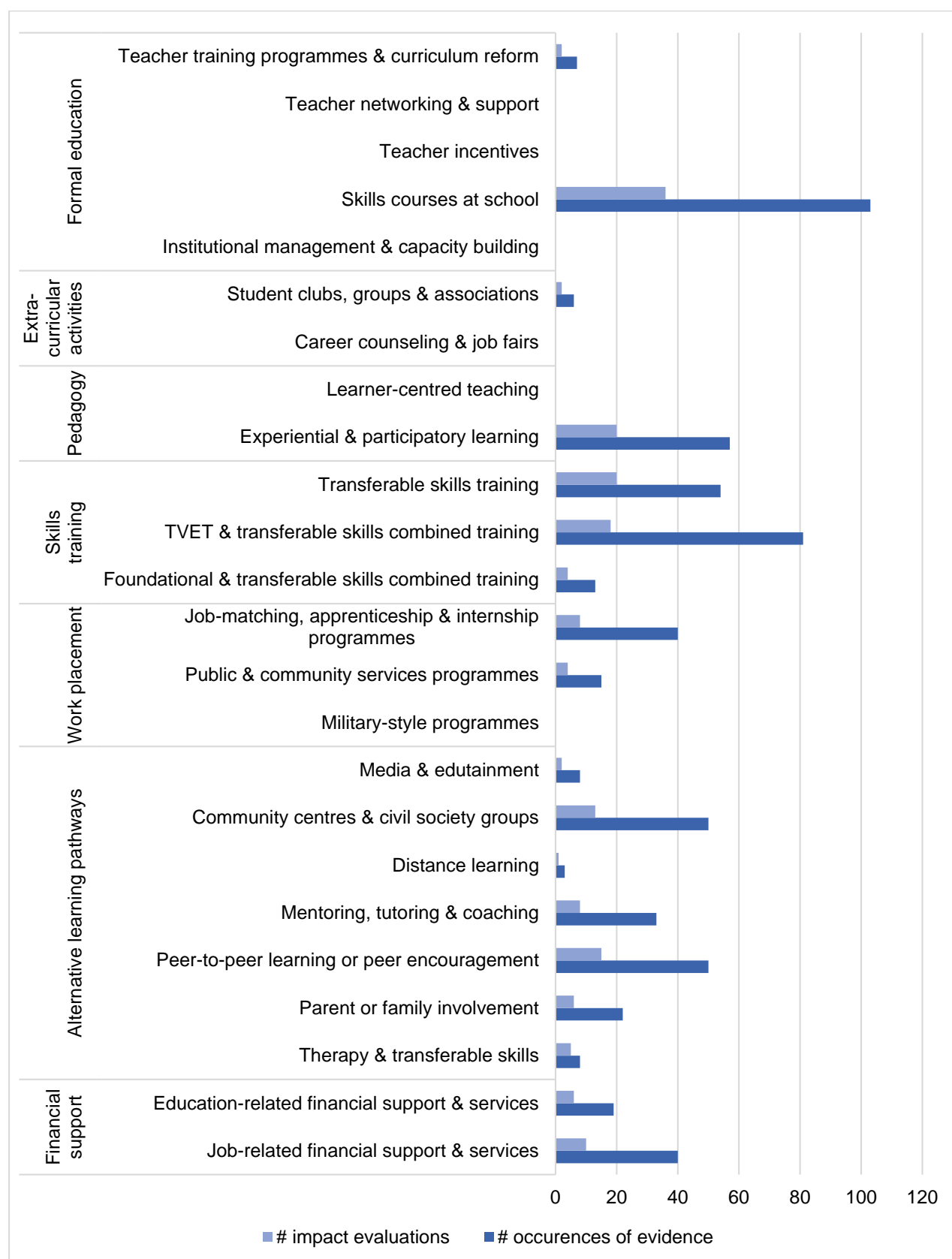
When populated into the map, the studies produce 609 occurrences. An occurrence is each cell in which a study appears. So, for example, if a study looks at a programme that includes community centres and peer-to-peer learning, and the study estimates programme effects of both (separately or together) on outcomes measured with indicators belonging to the categories 'individual beliefs and attitudes', 'social participation and interaction', and 'demography and health', then there are six occurrences of the study – it appears in six different cells of the gap map. We can think of this as meaning that it reports six different types of evidence. There should be at least one distinct outcome indicator for each outcome category listed. But if a programme has multiple components that cannot be isolated for the evaluation, then one piece of evidence (the effect of the programme on a particular indicator) will appear for each of the intervention types that make up the intervention.

The large number of occurrences relative to the number of included studies reflects both that many programmes comprise different types of interventions and that many impact evaluations measure the impact of the programme on multiple types of outcomes. For example, the Ibarrarán *et al.* (2012) study on life skills and employability training in Dominican Republic measures the impact on outcomes in six different categories.

3.1 Features of the evidence base

Figure 2 displays the volume of the evidence base by intervention category. In this figure and in figures 3 and 4, the lighter bar displays the number of studies and the darker bar displays the number of occurrences in the evidence gap map.

Figure 2: Amount of evidence and number of impact evaluations by intervention category



The intervention category with the most evidence, both in terms of number of studies and occurrences of evidence, is 'skills courses in the classroom' (FE4). These are transferable skills sessions, courses or workshops added to the regular school curriculum. The majority of the programmes evaluated in these studies are sexual and reproductive health related or other health-related courses. The other intervention categories in the formal education grouping have very few studies and occurrences of evidence.

The category with the next-highest prevalence of evidence is 'TVET and transferable skills combined training' (ST2). In fact, the search returned an even greater number of studies of looking at labour market and TVET interventions. As explained above, we only included those that specifically state that teaching or imparting transferable skills is a part of the intervention. The fourth intervention category with the largest amount of evidence is 'Transferable skills training' (ST1).

The third-highest category is 'experiential and participatory learning' (PM2), which we include to capture studies that explore these pedagogies. The specific types of programs evaluated in these studies may be very different. The evidence gap map shows that there are a large number of studies that test the effectiveness of experiential and participatory learning.

There are six intervention categories for which we did not find any impact evaluations: 'teacher networking and support' (FE2), 'teacher incentives' (FE3), 'institutional management and capacity building' (FE5), 'career counselling and job fairs' (EC2), 'learner-centred teaching' (PM1) and 'military-style programmes' (WP3). The first three of these are in the formal education grouping. We thus find the greatest number of studies about courses inserted into schools that include transferable skills components but the least amount of evidence for other types of transferable skills programs in secondary schools.

Figure 3 shows the volume of evidence by outcome category. Strikingly, only one study measured outcomes at the institutional level. Groh *et al.* (2012) measured the effects of an employability skills training and job voucher provided to the employer on firm-level outcomes such as number of women employed by a business.⁴ It is often harder to measure outcomes at these higher levels with impact evaluations where the data collection is at the individual level, particularly in order to have a large enough sample size to test hypotheses. Nonetheless, impact evaluations in other fields of international development often do measure outcomes at the community, school or firm level.

⁴ The specific results for these outcomes are not included in the working paper identified through our search, but the paper suggests they were measured. We reached out to the authors for further details and they kindly provided us with these findings.

Figure 3: Amount of evidence and number of impact evaluations by outcome category

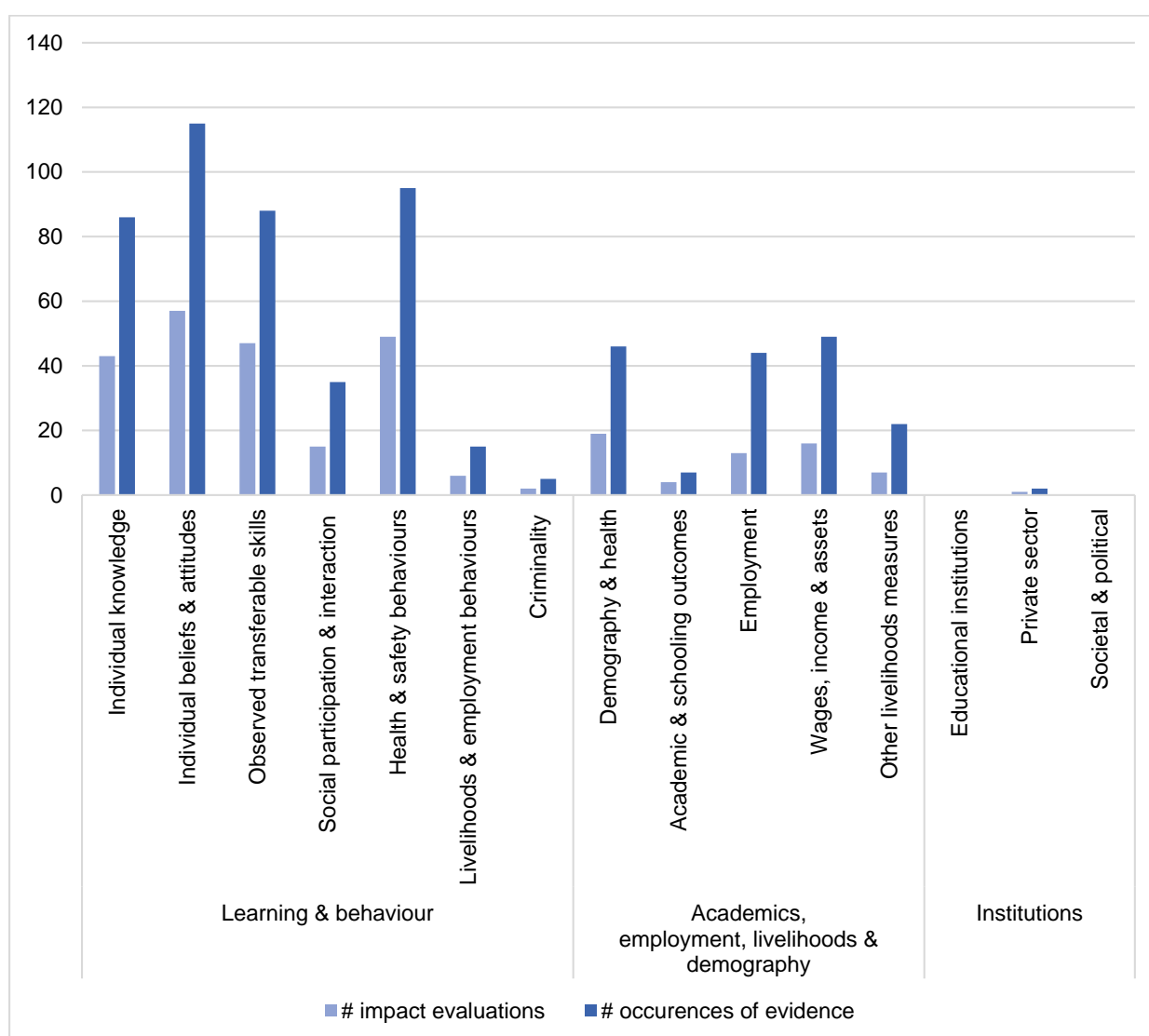
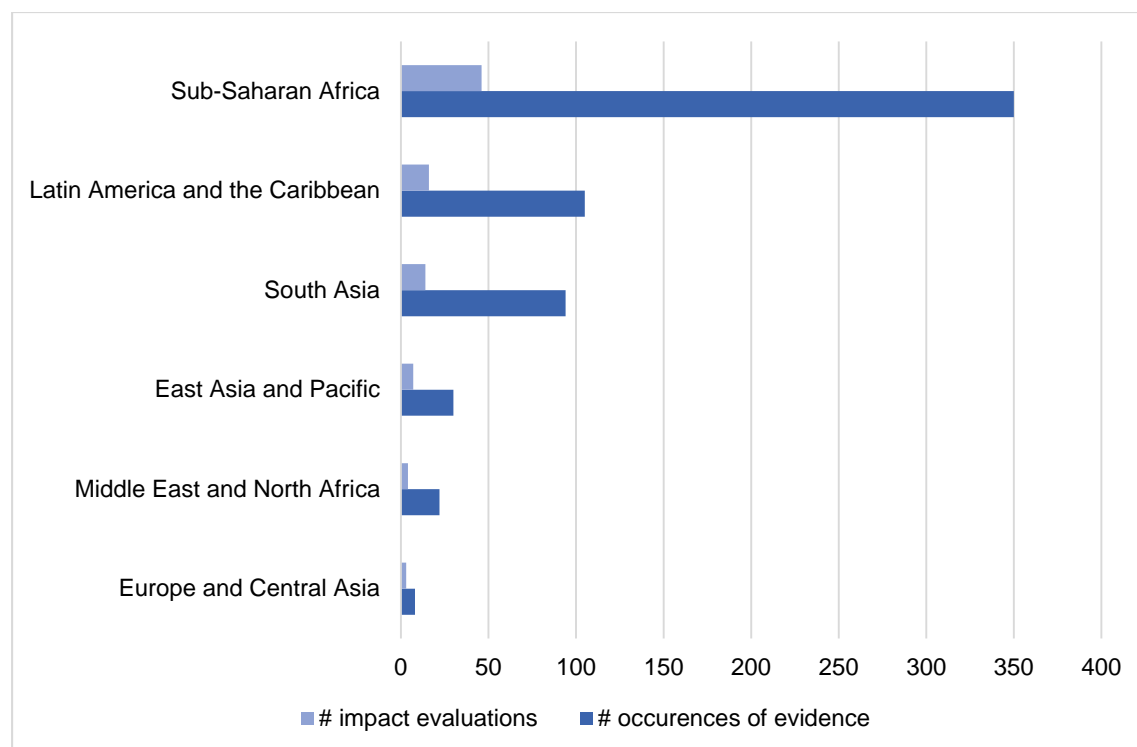


Figure 3 shows that the outcome category ‘individual beliefs and attitudes’ (LB2) has the largest number of studies as well as the greatest quantity of evidence, followed closely by ‘health and safety behaviours’ (LB5), ‘observed transferable skills’ (LB3) and individual knowledge’ (LB1). In fact, many of the studies measure several indicators within each of these categories, particularly individual knowledge and beliefs and attitudes. Most of these outcomes, particularly those on learning and behaviour, are self-reported. Many of the transferable skills indicators are measured as composite indexes of questions given to participants.

Figure 4 shows the distribution of evidence across the regions with L&MICs.

Figure 4: Amount of evidence and number of studies by region



We see that there are as many studies for programmes in Sub-Saharan Africa as there are for the rest of the regions combined. And there is far more evidence from Sub-Saharan Africa than from the others combined. Some of the volume for Sub-Saharan Africa is accounted for by the large number of impact evaluations of HIV and AIDS-related programmes. Europe and Central Asia, followed by the Middle East and North Africa, have the least amount of evidence.

To view this distribution in greater detail, we divided the results based on the country in which the evaluations were conducted. In Figure 5, showing the number of impact evaluations by country, we see that the most amount of evidence is in South Africa, followed by Uganda, India and China. The most-represented region in terms of number of countries is Sub-Saharan Africa.

Figure 5: Number of studies by country

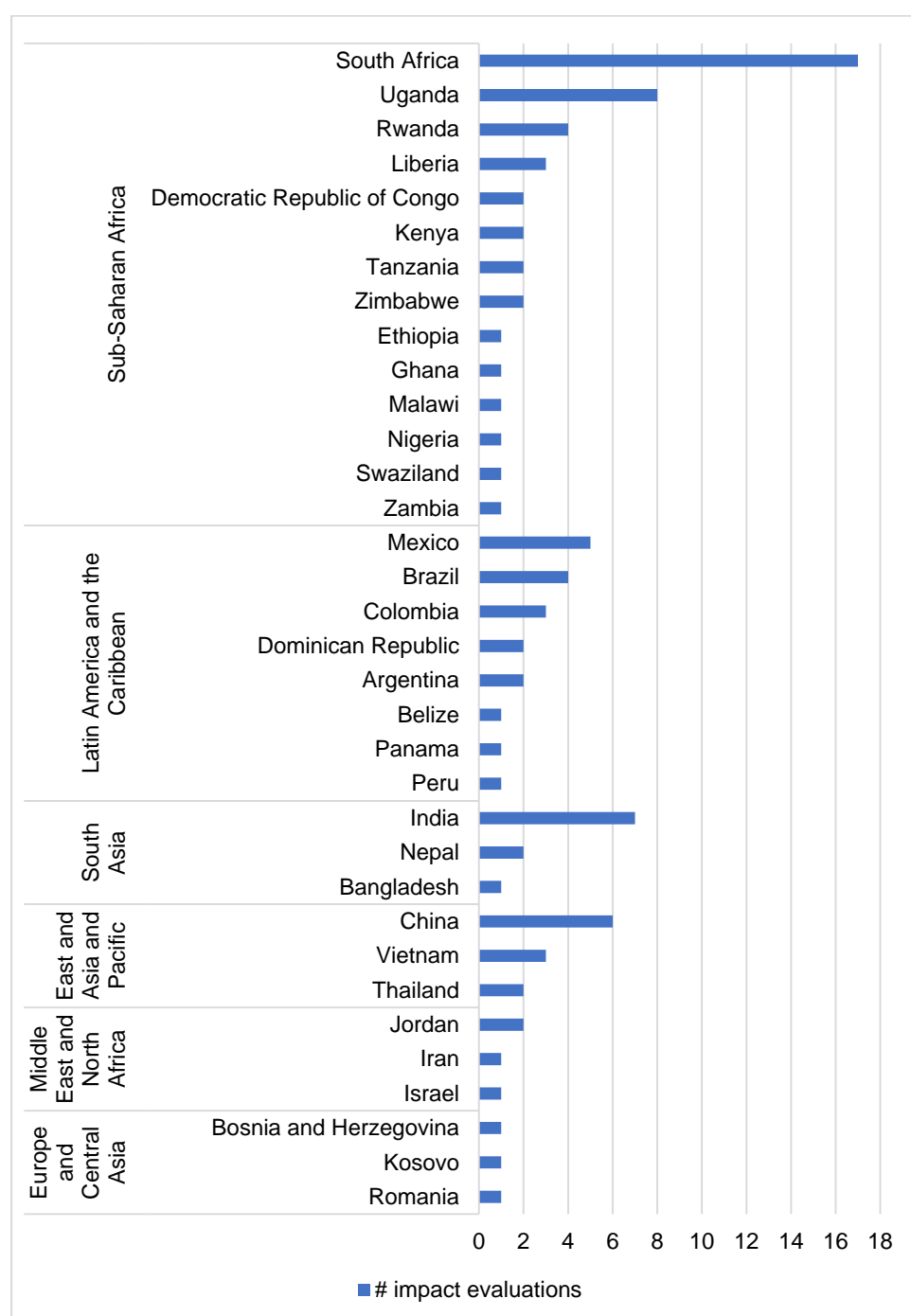


Figure 6 shows the methodologies employed by the included studies. The majority of studies are randomised controlled trials; just 23 studies employ quasi-experimental methods. Ten studies use multiple methods, for example combining double difference estimation or propensity score matching with a randomised controlled trial model.

Figure 6: Number of studies by methodology

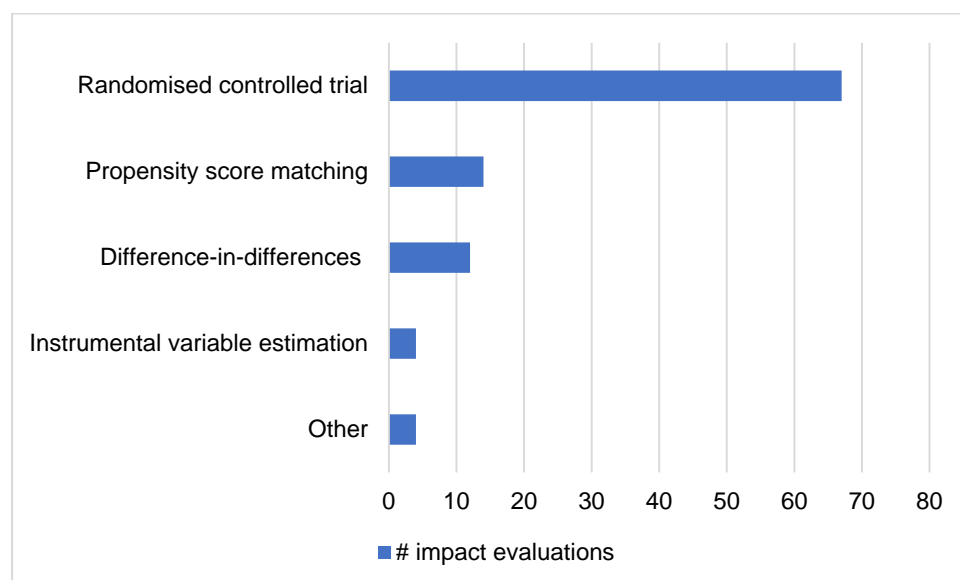
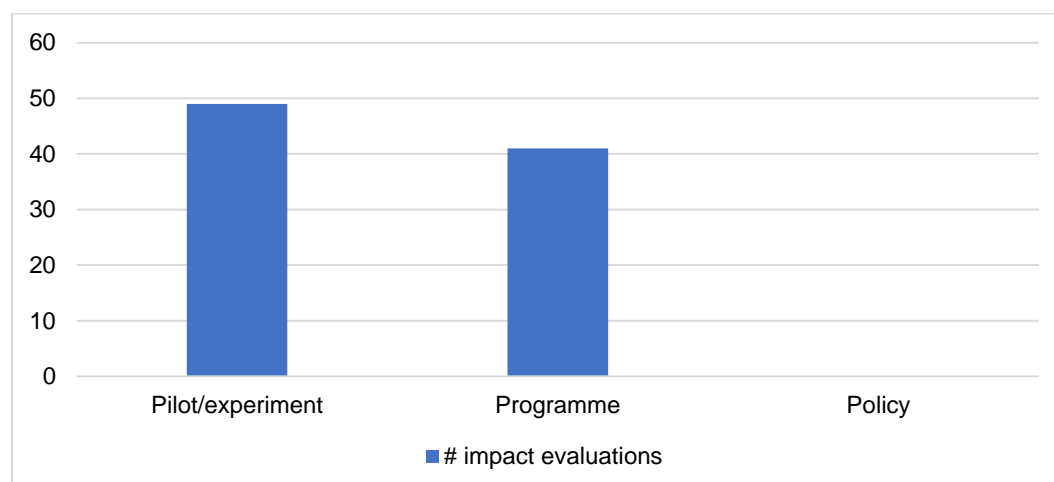


Figure 7 displays the type of programme that each study is evaluating. Each study was placed into one of three categories:

- Studies that evaluated a pilot or experiment, for which the interventions were conducted with the distinct goal of testing and evaluating their effects
- Studies that evaluated a programme, which operated separately from the evaluation
- Studies that evaluated a government policy

Figure 7: Number of studies by type of programme



Forty-nine studies evaluated pilots or experiments, for which the interventions were conducted with the distinct goal of testing and evaluating their effects. The SHAZ! project in

Zimbabwe, for example, was designed to test the effects of a combination of life skills education, reproductive health services and economic opportunities on long-term HIV infection and unintended pregnancy rates among adolescent female orphans (Dunbar *et al.* 2014). These pilots or experiments were often implemented by research-oriented institutions and organisations.

Forty-one studies evaluated a programme that existed outside of the study; these often were longer-term programs implemented by NGOs. Blattman and Annan (2012), for example, evaluated an agricultural training programme in Liberia run by the NGO Landmine Action, now known as Action on Armed Violence. Other examples can be found in the scoping paper accompanying this report (Brown *et al.* 2015). Several of these programmes were implemented by governments but were not made into formal policies. No study evaluated an existing government policy.

Table 3 presents the four right-most columns of the evidence gap map, those that provide information for the crosscutting themes. The first category captures studies that measure outcomes both at endline and at some point after endline. We find that there is evidence for outcomes measured beyond the end line for a large number of studies, particularly in the same categories where we see a large number of studies generally. Our criterion here is fairly weak, though. 'Long-term' is only defined as some point after endline. It is less clear how much evidence there is on the effects of transferable skills programmes long after the intervention is completed.

We also find studies that measure gender-specific outcomes. Sometimes these are programmes targeted just at young men or young women; sometimes the data for a single program are analysed separately for men and women. For the third crosscutting theme, cost-effectiveness, there is a dearth of evidence. Only eight studies provide some estimate of cost compared to the effect size estimated. While this is not unique to this sector of development programming, it is unfortunate, as it limits the ability of policymakers to design and select cost-effective programmes. Finally, we did not find many studies that look at early school leavers as a target group. Only 10 studies had some aspect of this.

Table 3: Amount of evidence by crosscutting theme

Intervention categories			Crosscutting themes			
			CC1 Measurement of long-term outcomes	CC2 Gender- specific analysis	CC3 Cost- effectiveness analysis	CC4 Early school leavers
FORMAL EDUCATION	FE1	Teacher training programmes & curriculum reform	1			
	FE2	Teacher networking & support				
	FE3	Teacher incentives				
	FE4	Skills courses at school	16	8	1	2
	FE5	Institutional management & capacity building				
EXTRA-CURRICULAR ACTIVITIES	EC1	Student clubs, groups & associations	1	1		
	EC2	Career counselling & job fairs				
PEDAGOGY	PM1	Learner-centred teaching				
	PM2	Experiential & participatory learning	12	10		2
SKILLS TRAINING	ST1	Transferable skills training	9	8	2	1
	ST2	TVET & transferable skills combined training	8	10	5	5
	ST3	Foundational & transferable skills combined training	2	3		1
WORK PLACEMENT	WP1	Job-matching, apprenticeship & internship programmes	2	4	3	3
	WP2	Public & community service programmes		2		
	WP3	Military-style programmes				
ALTERNATIVE LEARNING PATH	AL1	Media & edutainment				

	AL2	Community centres & civil society groups	3	5	1	3
	AL3	Distance learning	1		1	
	AL4	Mentoring, tutoring & coaching	4	4	2	1
	AL5	Peer-to-peer learning or peer encouragement	5	1		
	AL6	Parent or family involvement	2	2		
	AL7	Therapy & transferable skills	3	2		
FINANCIAL SUPPORT	FS1	Education-related financial support & services	2	1	2	1
	FS2	Job-related financial support & services	4	7	3	2

Appendix table A2 presents the evidence gap map framework with the eight ongoing studies coded. These are the ongoing studies for which enough information was available that we could code interventions and outcomes. There is one ongoing study in the bibliography for which not enough information was available for coding. Of the coded ongoing studies, a striking finding is that two of the studies aim to measure outcomes at the private sector level, looking specifically at job creation. These studies will begin to fill a noticeable gap for evidence of outcomes at this level.

3.2 Promising and priority questions for future research

3.2.1 Promising questions

The promising questions are those for which there are a large number of studies for a cell or a row, indicating that fruitful meta-analysis may be possible. We explore several possibilities in this gap map, including 'skills courses at school' (FE4) and 'TVET and transferable skills combined training' (ST2). We also look at the large clusters of evidence for 'community centres and civil society groups' (AL2) and 'peer-to-peer learning or peer encouragement' *. We compare both the body of evidence with the systematic reviews that we found in order to check whether existing systematic reviews synthesise the same evidence. Brown *et al.* (2015) summarise the systematic review findings. Here we simply explore the overlap in included studies to explore whether new systematic reviews would be able to answer different questions or capture additional evidence.

The intervention category with the most amount of evidence is 'skills courses at school' (FE4), specifically in terms of individual knowledge, beliefs and attitudes, measured transferable skills, and health and safety behaviours. We find in all four of these cells that the

majority of the studies are health-related and more than half are HIV-related.⁵ We see several common mechanisms among skills courses at school. Firstly, almost all interventions worked directly with teachers in some capacity. Some interventions, such as Huang *et al.* (2008), were peer-led and the teachers were simply used to identify leaders and help facilitate the process. In many other studies, teachers delivered the content in a classroom setting. Many interventions occurred solely in the classroom; others employed different approaches within the school. The DramAIDE project in South Africa, for example, conducted HIV and AIDS-related drama workshops with teachers and large groups of students from multiple classes (Harvey, Stuart & Swan 2000). The project then held a final celebratory day for the full school that presented dramas, songs, dances and posters created by the students. While the variety of approaches and mechanisms assessed in these studies would need to be addressed, the theories of change are similar and there is a possibility to synthesise the evidence from these school-based skills trainings. A systematic review could focus on the methods used for skill generation.

There is one existing systematic review that is related to this intervention category. Fonner *et al.* (2014) conducted a systematic review of school-based interventions targeting HIV prevention that includes 10 studies found in the youth and transferable skills evidence gap map. The authors searched for all school-based interventions addressing HIV prevention, finding 64 studies, 21 of which have a skills-based approach. The 11 skills-focused studies not included in the map used non-experimental methods. The authors do not delve into the specific skills-based approaches employed. An ongoing systematic review of interventions aiming to reduce youth involvement in gangs and gang crime (Higginson *et al.* 2014) aims to look at interventions that enhance resilience and other life skills in school and community settings. The authors are looking for a wide range of preventive interventions in the school setting with main outcomes of gang participation and violence. There will be some overlap between this systematic review and the FE4 cells in the evidence gap map. Neither of these systematic reviews, however, covers the full scope of analysis possible using the 36 studies in this intervention category, particularly in terms of evaluating the mechanisms.

Another promising category is TVET combined with transferable skills training (ST2). In a recent systematic review (2013), Tripney and Hombrados explore TVET for youth in L&MICs, finding 26 studies, six of which are found in our evidence gap map. The remaining studies mainly evaluate programmes that target only technical and vocational skills. The authors find some evidence supporting the idea that TVET programmes positively affect formal employment and earnings for youth but note the need for more evidence, particularly on certain approaches such as apprenticeship training (Tripney & Hombrados 2013). A large number of their included studies are multi-component, combining vocational training with other topics and approaches, including life skills training. The authors make mention of the incorporation of transferable skills into TVET programmes, framing job readiness and other skills in terms of 'labour mediation' (Tripney & Hombrados 2013). The authors do not, however, address the effects of combining vocational training with other skills training. An ongoing systematic review (Kluve *et al.* 2014) is working towards addressing this gap in the context of active labour market policies. The scope of the Kluve *et al.* review is broader than would be a systematic review focusing on TVET combined with specific transferable skills

⁵ See Brown *et al.* (2015) for a description of the data extraction and analysis for study topics.

elements. Once we see the final analysis in the Kluve *et al.* review, we can determine whether a more focused systematic review is warranted.

There are clusters of evidence for several alternative learning pathways at the learning and behaviour outcome level, specifically in terms of community-based interventions ('community centres and civil society groups' [AL2]) and 'peer-to-peer learning or peer encouragement' (AL5). The 'community centres and civil society groups' category includes groups and clubs that meet outside of the school setting, as well as initiatives outside of school that are connected to the broader community. As an example of the latter, an adolescent reproductive health program in Nepal not only asked the community to help design the interventions but also encouraged the youth to interact directly with village development committees, practising critical communication and consensus-building skills (Malhotra *et al.* 2005).

Speizer *et al.*'s systematic review (2003) assesses adolescent reproductive health programming in different settings. They classify five studies as community-based interventions. This classification does include the use of peer educators, which we code in a category separate from community-based interventions. Two of these studies were included in our evidence gap map. The other studies in the review focused on HIV and AIDS knowledge and access to health services and condoms without targeting transferable skills. Kaufman, Spencer and Ross (2013) systematically reviewed sports-based HIV prevention programmes that were school- and community-based. While some incorporated life skills (often following the Grassroot Soccer model), these did not meet our criteria for inclusion in the gap map, as they used non-experimental methods. Thus, the existing reviews do not encompass the body of evidence identified in the map for community-based interventions targeted to transferable skills.

The peer-to-peer learning category (AL5) contains some studies that included a peer-to-peer component as part of a strategy but did not specifically measure the effect of this approach. Some did, however. Sherman *et al.* (2009), for example, compared two approaches to reducing methamphetamine use amongst Thai high school students. The first was a standard, knowledge-focused life skills curriculum led by an adult and the second was led by a peer educator and emphasised communication with peer social networks (Sherman *et al.* 2009). While there is a significant amount of evidence in this category, the approaches vary too widely across the different studies to consider the option of meta-analysis in this particular category at this time.

3.2.2 Priority questions

In order to identify priority questions for future research investment, we need to look at both the supply and demand of evidence around transferable skills programming for youth. The evidence gap map provides the supply-side analysis for identifying priority research questions in this particular area; the scoping paper on youth and transferable skills (Brown *et al.* 2015) combines these supply-side findings with a discussion of the demand for youth and transferable skills evidence.

In discussing priority areas for research, we want to ensure that the gaps visible in the evidence gap map reflect clear theories of change. If the causal change is too indirect, the effects of an intervention cannot confidently be attributed to an outcome. For example,

institutional management and capacity building in the formal education system could conceivably have an effect on the individual knowledge of students, but it is unlikely that researchers would attempt to measure this. Therefore, we inserted cross-hatching into the cells for which the connection between the intervention and outcome categories is weak or very indirect. We base these choices on information from the scoping paper, as well as on our own knowledge of programming. This does not mean that there could not be a theory of change between the two, but simply that the lack of evidence does not reflect an important gap in research.

It is evident from the map that, besides courses and workshops that are conducted in a school setting on an *ad hoc* basis (and not incorporated into the permanent curriculum), there is a dearth of evidence of programming connected to the formal education system. Specifically, there is little to no evidence on institutional-level changes and teacher-focused interventions. As the formal education system is an easily accessible platform through which to effect change, this could be a large gap. In fact, the primary interest of this project's funders, the MasterCard and MacArthur foundations, was transferable skills programming in a secondary education context.

One possibility of why we see so much evidence for 'skills courses at school' (FE4) and not 'teacher training programmes and curriculum reform' (FE1) is that organisations and researchers prefer to pilot an approach first, as this is quicker and easier and allows for non-governmental entities to test approaches outside of the formal curriculum. Those programs with positive results very well could have been incorporated into the curriculum and formal school system thereafter, but were simply not evaluated using a counterfactual, and so we do see an impact evaluation.

We can see from the map that there is no evidence on learner-centred approaches (PM1). For this category, we were looking for studies on interventions that let youth to actively choose elements of their curriculum and activities. We did not find studies that test this pedagogy or even studies that specifically mention a learner-centred pedagogy that fit our other criteria.

We find several interesting trends by focusing on the outcome columns of the gap map as opposed to the interventions. For example, there is a paucity of evidence around 'academic and schooling outcomes' (EL2). We found just a small number of studies that measure academic outcomes; these indicators include current enrolment, frequency of school attendance and test scores (Bandiera *et al.* 2014; Nyirazinyoye 2011; Bet, Cristia & Ibarrarán 2014). This is surprising, as many researchers consider non-cognitive skills to be important for the achievement of academic outcomes. Farrington *et al.* (2012) review the evidence on the relationship between non-cognitive skills and academic behaviours and outcomes and find strong evidence, particularly in terms of behaviours.

Additionally, while many studies do measure employment and income outcomes, we see that fewer studies assess other livelihoods, behaviours and measures. Examples that measure these include Adoho *et al.* (2014) who measure the impact of an adolescent girls' employment program on household food security. Cho *et al.* (2013) measure household well-being via a composite index, and Mensch *et al.* (2004) measure the amount of time spent on domestic chores.

Finally, we see very little evidence around outcomes related to ‘criminality’ (LB7), for which there seems to be a connection to skills surrounding self-control, civic education and interpersonal relationships, amongst others. For example, Rotheram-Borus *et al.* (2012) measured the frequency of delinquent behaviours including theft, threatening someone or starting a fight.

4. Limitations

We searched all the relevant indexes and databases to which we were able to gain access. However, in the interest of time, we had only one person conduct each search with a single search specialist supervising and compiling the search work. The title and abstract screening were also only conducted by one person for each search hit. We may have missed some studies.

This search strategy was also challenging because we sought a wide range of interventions and because donors and implementers often use different terms for the same thing. We found that when covering this wide range while trying to avoid capturing too many studies connected to other academic or technical skills, our final strategy emphasised non-cognitive skills more than the cognitive skills we consider transferable. This strategy seems to reflect the broader literature, though, as discussions around ‘life skills’, ‘soft skills’ and similar topics often focus on the non-cognitive skills over others.

Despite the plurality of definitions and uses of the terms, we nevertheless kept the focus of our search on the skills instead of running a search based on intervention terms. We screened initially on context and methods and did not exclude studies based on intervention or outcome until we were conducting the full-text screening and coding. When in doubt, we erred on the side of inclusion.

Two people coded each of the included studies, with any discrepancies resolved through discussion or by a third person.

5. Conclusion

This report summarises the findings of an evidence gap map on transferable skills programming for youth in L&MICs, developed by 3ie as part of a project funded by the MacArthur Foundation and the MasterCard Foundation. The evidence gap map provides a visual representation of how much impact evaluation evidence exists on youth and transferable skills according to the types of programmes evaluated and outcomes measured. The map contains 90 completed impact evaluations coded across 24 intervention categories and 15 outcome categories. The framework for the map was developed through a consultative process involving stakeholders from several agencies and organisations.

We find a variety of trends in the evidence, such as the following:

- The evidence base includes a large number of impact evaluations of interventions incorporating alternative learning pathways such as peer-to-peer approaches.
- The most common outcomes measured are those related to individual learning and behaviour.

- The region of the world with the most evidence is Sub-Saharan Africa. In terms of countries, the highest number of impact evaluations are from South Africa, followed by Uganda and India.
- The most common method employed in the impact evaluations in the map is randomised controlled trial.

Looking at the amount of evidence in each cell of the map, we find several clusters of evidence and several gaps in the evidence, including:

- A cluster of evidence around 'skills courses at school' (FE4), particularly for outcomes measuring individual knowledge, beliefs and attitudes (LB1 and LB2);
- Another cluster for 'TVET and transferable skills combined training' (ST2) and measure employment and income outcomes (EL3 and EL4); and
- Gaps in evidence on 'academic and schooling outcomes' (EL2), as well as institutional outcomes (I1-3).

The evidence gap map and this report illuminate the supply of evidence connected to transferable skills programming. The accompanying scoping paper (Brown *et al.* 2015) explores this supply of evidence, as well as the demand for this evidence, in more detail.

Appendix A: Methodological details

We adapted the search strategy in table A1 to each of the indexes and websites listed in table A2.

Table A1: Search strategy

#	Search syntax
Topic and location keywords (must include)	
1	(train* OR skill* OR competen* OR learn* OR develop*) .ti,ab.
2	(psychosocial OR psycho-social OR interpersonal OR socio-emotional OR communicat* OR negotiat* OR non-cognitive OR noncognitive OR transferable OR livelihood OR civic OR affective OR entrepreneur*).ti,ab.
3	1 AND 2
4	("non-formal education" OR "informal education" OR "social capital" OR "self-efficacy" OR "youth development" OR "adolescent development" OR "social development" OR "emotional development" OR psychosocial OR psycho-social OR interpersonal OR "social capital" OR "socio-emotional" OR "civic education" OR "affective domain" OR empower* or "soft skill*" or "life skill*").ti,ab.
5	(train* or skill* or empower* or competen* or abilit* or efficacy or "non-formal").hw
6	((skill* OR train*) adj2 (life OR non-cognitive OR noncognitive OR soft OR social OR interpersonal OR transferable OR negotiation OR communicat* OR "decision-making")).tw
7	job skills/ or Career Readiness/ or social capital/ or capacity building/ or exp Skill Development/ or exp Employment Potential/ or exp Training/ or exp Vocational Education/ or career development/ or career education/ or education work relationship/ or vocational maturity/ or exp Work Attitudes/ or exp Employee Attitudes/ or exp job performance/ or exp school business relationship/ or *"Work Experience Programmes"/ or Work Experience/ or "Educational Needs"/ or *"Education Work Relationship"/ or "Economic Development"/ or daily living skills/ or exp basic business education/ or exp communication skills/ or exp decision making skills/ or exp interpersonal competence/ or exp Business Skills/ or affective objectives/ or entrepreneurship/
8	3 OR 4 OR 5 OR 6 OR 7
Youth Terms	
9	("young adult" or "secondary school" or "secondary education" or "high school" or teenage* or "after school" or "young women" or "young men" or "after school" or girls or boys).ti,ab.
10	(youth or adolescen*).tw
11	exp Youth Clubs/ or exp Youth Programmes/ or exp Urban Youth/ or exp Youth Employment/ or exp Youth Opportunities/ or exp Rural Youth/ or exp Youth/ or exp "Out of School Youth"/ or exp Disadvantaged Youth/ or exp Youth Agencies/ or exp Adolescents/ or exp Secondary Education/ or exp Secondary Schools/ or exp High Schools/ or exp After School Programmes/ or exp High School Students/ or exp School Activities/ or "Disadvantaged Youth"/
12	9 OR 10 OR 11
Impact evaluation keywords (must include)	
13	((impact and (evaluat* or assess* or analy* or estimat*)) or (effect* and (evaluat* or assess* or analy* or estimat*))).ti,ab.
14	(match* adj4 (propensity or coarsened or covariate or statistical or characteristic)).ti,ab.
15	((("difference* in difference*" or "difference-in-difference*" or "differences-in-difference*" or "double difference*") or ("fixed effect*" and (interaction and term))).ti,ab.

16	((("instrument* variable") or (IV adj2 (estimation or approach))))ti,ab.
17	("regression discontinuity").ti,ab.
18	(random* ADJ4 (trial or allocat* or intervention* or treatment* or control*))ti,ab.
19	((programme* or intervention* or project or projects))ti,ab.
20	13 or 14 or 15 or 16 or 17 or 18
21	19 and 20

Study topic area

22	evaluation/ or programme evaluation/ or treatment effectiveness evaluation/
23	Educational Programme Evaluation/ or School Based Intervention/ or between groups design/ or clinical trials/
24	meta analysis/
25	("programme* evaluation" OR "project evaluation" OR "evaluation research" OR "impact evaluation" OR "impact assessment" OR "impact analysis" OR "natural experiment")ti,ab.
26	((systematic* adj2 review*) or "meta-analy*" or "meta analy*")ti,ab.
27	22 or 23 or 24 or 25 or 26

Combined total

28	21 or 27
29	8 and 12
30	28 and 29

Developing-country free text

31	(Africa or "sub Saharan Africa" or "North Africa" or "West Africa" or "East Africa" or Algeria or Angola or Benin or Botswana or Burkina Faso or Burundi or Cameroon or "Cape Verde" or "Central African Republic" or Chad or "Democratic Republic of the Congo" or "Republic of the Congo" or Congo or "Cote d'Ivoire" or "Ivory Coast" or Djibouti or Egypt or "Equatorial Guinea" or Eritrea or Ethiopia or Gabon or Gambia or Ghana or Guinea or Guinea-Bissau or Kenya or Lesotho or Liberia or Libya or Madagascar or Malawi or Mali or Mauritania or Morocco or Mozambique or Namibia or Niger or Nigeria or Rwanda or "Sao Tome" or Principe or Senegal or "Sierra Leone" or Somalia or "South Africa" or "South Sudan" or Sudan or Swaziland or Tanzania or Togo or Tunisia or Uganda or Zambia or Zimbabwe)ti,ab.
32	("South America" or "Latin America" or "Central America" or Mexico or Argentina or Bolivia or Brazil or Chile or Colombia or Ecuador or Guyana or Paraguay or Peru or Suriname or Uruguay or Venezuela or Belize or "Costa Rica" or "El Salvador" or Guatemala or Honduras or Nicaragua or Panama)ti,ab.
33	(Caribbean or "Antigua and Barbuda" or Aruba or Barbados or Cuba or Dominica or "Dominican Republic" or Grenada or Haiti or Jamaica or "Puerto Rico" or "St. Kitts and Nevis" or "Saint Kitts and Nevis" or "St. Lucia" or "Saint Lucia" or "St. Vincent and the Grenadines" or "Saint Vincent and the Grenadines" or "St. Vincent" or "Saint Vincent" or "Trinidad and Tobago")ti,ab.
34	("Eastern Europe" or Balkans or Albania or Armenia or Belarus or Bosnia or Herzegovina or Bulgaria or Croatia or Cyprus or "Czech Republic" or Estonia or Greece or Hungary or "Isle of Man" or Kosovo or Latvia or Lithuania or Macedonia or Malta or Moldova or Montenegro or Poland or Portugal or Romania or Serbia or "Slovak Republic" or Slovakia or Slovenia or Ukraine)ti,ab.

35	(Asia or "Middle East" or "Southeast Asia" or "Indian Ocean Island*" or "South Asia" or "Central Asia" or "East Asia" or Caucasus or Afghanistan or Azerbaijan or Bangladesh or Bhutan or Burma or Cambodia or China or Georgia or India or Iran or Iraq or Jordan or Kazakhstan or Korea or "Kyrgyz Republic" or Kyrgyzstan or Lao or Laos or Lebanon or Macao or Mongolia or Myanmar or Nepal or Oman or Pakistan or Russia or "Russian Federation" or "Saudi Arabia" or Bahrain or Indonesia or Malaysia or Philippines or Sri Lanka or Syria or "Syrian Arab Republic" or Tajikistan or Thailand or Timor-Leste or Timor or Turkey or Turkmenistan or Uzbekistan or Vietnam or "West Bank" or Gaza or Yemen or Comoros or Maldives or Mauritius or Seychelles).ti,ab.
36	("Pacific Islands" or "American Samoa" or Fiji or Guam or Kiribati or "Marshall Islands" or Micronesia or New Caledonia or "Northern Mariana Islands" or Palau or "Papua New Guinea" or Samoa or "Solomon Islands" or Tonga or Tuvalu or Vanuatu).ti,ab.
37	((developing or less-developed or "less* developed" or "under developed" or underdeveloped or under-developed or middle-income or "middle income" or "low income" or low-income or underserved or "under served" or deprived or poor*) adj2 (countr* or nation or population or world or state or economy or economies)) OR ("third world" or LMIC or L&MIC or LAMIC or LDC or LIC or "lami countr*" or "transitional countr*") OR (low* adj2 (gdp or gnp or "gross domestic" or "gross national" or "per capita income")).ti,ab.
38	developing nations/
39	31 or 32 or 33 or 34 or 35 or 36 or 37 or 38
40	30 and 39

Table A2: List of databases searched

Indexes	Provider
<i>From database providers</i>	
EconLit	EBSCO Host
SocINDEX	
Academic Search Complete	
IPSA (International Political Science Abstracts)	
Education Source	
Africa Wide Information	Ovid SP
Embase	
PsycINFO	
CAB Abstracts	
ERIC	
Science Direct	Elsevier BV
SCOPUS	
International Bibliography of Social Sciences (IBSS)	ProQuest
Applied Social Sciences Index and Abstracts (ASSIA)	
Sociological Abstracts	
Public Affairs Information Service (PAIS International)	
ProQuest World Wide Political Science Abstracts (WWPSA)	

<i>Other academic databases</i>		
IDEAS RePEc		IDEAS
JOLIS		JOLIS
The National Bureau of Economic Research (NBER)		NBER
Social Science Research Network (SSRN)		SSRN
<i>Publisher databases</i>		
SAGE Journals		SAGE
Wiley Online Library		JJ Wiley and Sons
SpringLink		Springer
<i>Online research libraries</i>		
POPLINE		POPLINE
EPPI Centre Evaluation Database of Education Research		Eppi Centre
<i>Websites</i>		
3ie Impact Evaluation Repository		www
Abdul Latif Jameel Poverty Action Lab (J-PAL)		www
ELDIS		www
Global Partnership for Youth Employment		www
Innovations for Poverty Action (IPA) Database		www
International Youth Foundation		www
University of California Center for Effective Global Action (CEGA): Research Projects		www
Youth Employment Inventory		www
Rural Education Action Programme		www
DAC Evaluation Resource Centre (DEReC)		www
Global Partnership for Education		www
British Education Index (BEI)		www
<i>Banks</i>		
Development Impact Evaluation Initiative (DIME)		
IE ² Impact Evaluations in Education		
World Bank IE Working Papers		World Bank
enGEN IMPACT EVALUATIONS		
Independent Evaluation Group (IEG)		
Inter-American Development Bank (IDB)		www
Asian Development Bank (ADB): Evaluation Resources		www
African Development Bank (AfDB) Evaluation Reports		www
<i>Registries</i>		
Experiments in Governance and Politics (EGAP)		www
American Economic Association RCT Registry (AEA)		www
Registry of International Development Impact Evaluations (RIDIE)		www
Clinicaltrials.gov		www
<i>Systematic review databases</i>		
Cochrane		www
Campbell		www

Dissertations and theses

Dissertations & Theses Global

ProQuest

Networked Digital Library of Theses and Dissertations Index to Theses

National Digital
Library of Theses
and Dissertations

British Library Electronic Theses Online Service

EThOS

Figure A1: Youth and transferable skills gap map screening protocol

Instructions

Proceed through the questions in order. Note that an 'unclear' answer never excludes a study. The questions are designed to be as objective as possible. The questions are meant to start with those easier to ascertain and progress to those that will be harder to answer based on a quick read. The screener should feel confident of any 'yes' or 'no' answer used to exclude a study. Where the unclear cell is greyed out, the screener must make a yes or no determination before going on.

Screening questions	No	Yes	Unclear
Title			
1. Is the study focused in a country or countries classified as low- or middle-income?			
IF NO, THEN EXCLUDE			
2. Does the study involve empirical analysis?			
IF NO, THEN EXCLUDE			
3. Does the study concern a policy, program or intervention?			
IF NO, THEN EXCLUDE			
4. Is this a biomedical trial of a product, medication or procedure?			
IF NO, THEN EXCLUDE			
5. Is the study ONLY focused on affecting sexual/high-risk behaviour or the treating physical health conditions? (Note: if focused in psychological conditions, include for now)			
IF NO, THEN EXCLUDE			
6. Is the study clearly focused ONLY on children under 13 or on adults over 30?			
IF YES, THEN EXCLUDE			
Title and abstract			
Repeat questions 1–6.			
7. Is the study concerned with young people between 13 and 24 years old, inclusive? <i>Note that the study does not necessarily have to be focused ONLY on this age group. If in doubt, select unclear to include</i>			
IF NO, THEN EXCLUDE			
8. Does the study evaluate a policy, program or intervention directed at generating, developing or increasing skills or abilities			

Screening questions	No	Yes	Unclear
in young people between 13 and 24 years old? <i>(Note: skills and abilities are understood in a broad sense, and will be typically described in publications as transferable, employability, life, non-cognitive or soft skills and abilities. If in doubt, include.</i>			
IF NO, THEN EXCLUDE			
9. Does the study measure outcomes for many observations of a relevant unit of analysis (e.g. individuals, households, communities, firms)? <i>[This question is essentially whether the study is a 'large n' study.]</i> In the case of review studies, the question is whether the review includes studies that measure outcomes for many observations of a relevant unit of analysis.			
IF NO, THEN EXCLUDE			
10. Are the methods clearly identified and clearly NOT among the methodologies for impact evaluations or systematic review we consider (see list)?			
IF YES, THEN EXCLUDE			
<i>Note: all studies that pass question 10 but are ultimately excluded should be filed in the 'other evaluations' folder.</i>			
Full text			
Repeat questions 6–10 <i>Note: all studies that pass question 10 but are ultimately excluded should be filed in the 'other evaluations' folder.</i>			
11. Is the development of skills among youth between 13 and 24 years old part of the theory of change of the policy, program or intervention?			
IF NO, THEN EXCLUDE			
<i>Note: all studies that pass question 8 but are ultimately excluded should be filed in the 'other evaluations' folder.</i>			
12. Does the study focus ONLY on skills and abilities that are specialised to a type of jobs (e.g. vocational skills, technical skills, management skills)			
IF YES THEN EXCLUDE			
13. Does the study focus ONLY on knowledge about or treatment of health issues (e.g. HIV, risky behaviour, physical or psychological therapy)			
IF YES THEN EXCLUDE			
14. Does the study use one of the following impact evaluation methodologies: a) Randomised controlled trial (RCT) b) Regression discontinuity design (RDD) c) Propensity score matching (PSM) or other matching methods			

Screening questions	No	Yes	Unclear
d) Instrumental variable (IV) estimation (or other methods using an instrumental variable such as the Heckman two-step approach) e) Difference-in-differences (DD) or a fixed- or random-effects model with an interaction term between time and intervention for baseline and follow-up observations. Note: The study may also use methods in addition to those listed here (such as regression with controls), or may use a primary evaluation methodology not listed (such as in a natural experiment), but must do so in addition to one of the above methods (a–e).			
IF YES, THEN INCLUDE; IF NO, KEEP GOING			
15. Is the study described as a systematic review, synthetic review or meta-analysis? If yes, does the review: a) Include studies undertaken in L&MIC countries b) Describe methods used for search, screening, data collection and synthesis c) Concern questions other than those related to treatment efficacy (trials undertaken in closed clinical or laboratory settings) d) Have a publication date of 1990 or later?			
IF NO, EXCLUDE			

Coding sheet for included studies

Instructions

For each impact evaluation study included at the end of the screening protocol, please read the full text to extract the following information. Remember, the interventions and outcomes code are *only those* for which the evidence in the study is counterfactual-based. The study may report other components of the programme or report data on a wide variety of outcomes. For the purpose of the gap map, we only code the interventions for which there is a counterfactual-based outcome analysis and the outcomes that are measured as part of that counterfactual-based analysis.

For studies identified as systematic reviews according to the screening protocol, complete the checklist for making judgments about how much confidence to place in a systematic review of effects from appendix 2 of Snilstveit, B, Vojtkova, M, Bhavsar, A and Gaarder, M (2013) 'Evidence Gap Maps: A Tool for Promoting Evidence-Informed Policy and Prioritizing Future Research' Policy Research Working Paper 6725, Independent Evaluation Group, World Bank. The checklist should be completed before coding. Only code those systematic reviews that are deemed to have medium or high confidence according to the checklist.

Note: any study for which an intervention or outcome category cannot be identified from the list should be set aside for re-screening.

Study authors			
Study title			
Year of publication/date on document			
Country(ies) where intervention implemented			
Intervention end date (year)			
Latest year outcomes are measured			
Methods used (from screening protocol)			
Intervention 1	Name and description of intervention		Category code(s) of intervention from intervention list
Outcomes measured for intervention 1	Name of outcome	Observational level of measurement	Category code(s) for outcome from outcome list
For intervention 1, does the study include the following (y/n)?	Analysis of gender outcomes	Analysis of youth outcomes	Cost-effectiveness analysis
Intervention 2	Name and description of intervention		Category code(s) of intervention from intervention list

Outcomes measured for intervention 2	Name of outcome	Observational level of measurement	Category code(s) for outcome from outcome list
For intervention 2, does the study include the following (y/n)?	Analysis of gender outcomes	Analysis of youth outcomes	Cost-effectiveness analysis
Intervention 3	Name and description of intervention		Category code(s) of intervention from intervention list
Outcomes measured for intervention 3	Name of outcome	Observational level of measurement	Category code(s) for outcome from outcome list
For intervention 3, does the study include the following (y/n)?	Analysis of gender outcomes	Analysis of youth outcomes	Cost-effectiveness analysis

Figure A2: Youth and transferable skills evidence gap map (without crosscutting themes columns)

Intervention categories		Outcome & impact measurement categories														
		Learning & behaviour							Academics, employment, livelihoods & demography					Institutions		
		LB1 Individual knowledge	LB2 Individual beliefs & attitudes	LB3 Measured transferable skills	LB4 Social participation & interaction	LB5 Health & safety behaviours	LB6 Livelihoods & employment behaviours	LB7 Criminality	EL1 Demography & health	EL2 Academic, schooling outcomes	EL3 Employment	EL4 Wages, income & assets	EL5 Other livelihoods measures	I1 Educational institutions	I2 Private sector	I3 Societal & political
FORMAL EDUCATION	FE1 Teacher training programmes & curriculum reform	2	2	2		1										
	FE2 Teacher networking & support															
	FE3 Teacher incentives															
	FE4 Skills courses at school	23	29	22	2	25		2								
	FE5 Institutional management & capacity building															
EXTRA-CURRICULAR ACTIVITIES	EC1 Student clubs, groups & associations	1	1	1	1	1						1				
	EC2 Career counseling & job fairs															
PEDAGOGY	PM1 Learner-centred teaching															
	PM2 Experiential & participatory learning	11	13	11	2	13		5		1	1					
SKILLS TRAINING	ST1 Transferable skills training	8	11	8	4	11		6		2	2	1		1		
	ST2 TVET & transferable skills combined training	5	9	8	6	7	4	2	5	2	13	15	5			
	ST3 Foundational & transferable skills combined training	1	1	1	2	1	1	1	2		2	1				
WORK-PLACEMENT	WP1 Job-matching, apprenticeship & internship programmes	2	3	5		2	2	3		10	9	4				
	WP2 Public & community service programmes		2	2	2	1	1	2	1	1	2	1				
	WP3 Military-style programmes															
ALTERNATIVE LEARNING PATHWAYS	AL1 Media & edutainment	2	2	2		2										
	AL2 Community centres & civil society groups	10	11	5	3	9	2	4	2	2	1	1				
	AL3 Distance learning	1	1			1										
	AL4 Mentoring, tutoring & coaching	2	4	2	2	5	1	1	3	1	5	5	2			
	AL5 Peer-to-peer learning or peer encouragement	11	13	10	2	9	1	3				1				
	AL6 Parent or family involvement	4	6	4	2	2	1	1	1			1				
	AL7 Therapy & transferable skills			1	2			5								
FINANCIAL SUPPORT	FS1 Education-related financial support & services	1	4	1	1	2		2		2	4	2				
	FS2 Job-related financial support & services	2	3	3	4	3	2	1	3		6	7	5		1	

Figure A3: Youth and transferable skills map of ongoing studies

Intervention categories		Outcome & impact measurement categories														
		Learning & behaviour							Academics, employment, livelihoods & demography					Institutions		
		LB1 Individual knowledge	LB2 Individual beliefs & attitudes	LB3 Measured transferable skills	LB4 Social participation & interaction	LB5 Health & safety behaviours	LB6 Livelihoods & employment behaviours	LB7 Criminality	EL1 Demograph y & health	EL2 Academic, schooling outcomes	EL3 Employment	EL4 Wages, income & assets	EL5 Other livelihoods measures	I1 Educational institutions	I2 Private sector	I3 Societal political
FORMAL EDUCATION	FE1 Teacher training programmes & curriculum reform	1	1	1		1		1	1	1	1					
	FE2 Teacher networking & support															
	FE3 Teacher incentives															
	FE4 Skills courses at school															
	FE5 Institutional management & capacity building															
EXTRA-CURRICULAR ACTIVITIES	EC1 Student clubs, groups & associations	1	1													
	EC2 Career counseling & job fairs															
PEDAGOGY	PM1 Learner-centred teaching															
	PM2 Experiential & participatory learning															
SKILLS TRAINING	ST1 Transferable skills training		2	3	1	2	2			1	2	1				
	ST2 TVET & transferable skills combined training	2	1	2		1	2				3	3			2	
	ST3 Foundational & transferable skills combined training															
WORK-PLACEMENT	WP1 Job-matching, apprenticeship & internship programmes			1							1	1			1	
	WP2 Public & community service programmes			1	1	1						1				
	WP3 Military-style programmes															
ALTERNATIVE LEARNING PATHWAYS	AL1 Media & edutainment		1	1			1				1					
	AL2 Community centres & civil society groups															
	AL3 Distance learning															
	AL4 Mentoring, tutoring & coaching	2	2	3		1	3				4	3			2	
	AL5 Peer-to-peer learning or peer encouragement															
	AL6 Parent or family involvement															
	AL7 Therapy & transferable skills															
FINANCIAL SUPPORT	FS1 Education-related financial support & services															
	FS2 Job-related financial support & services	2	1	2		1	2				3	3			2	

Appendix B: Bibliography of included impact evaluations

Completed impact evaluations

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The following papers are available from <http://www.3ieimpact.org/en/publications/3ie-evidence-gap-map-report-series/>

Evidence for peacebuilding: evidence gap map, 3ie evidence gap report 1. Cameron, DB, Brown, AN, Mishra, A, Picon, M, Esper, H, Calvo, F and Peterson, K (2015)

Policy makers, programme implementers and educators recognize that the skills a young person needs to succeed in today's world go beyond technical know-how in an employment setting. Transferable skills, also referred to as soft skills and life skills, provide youth with critically needed tools to be able to succeed in terms of employment, health and personal well-being. This report presents a 3ie evidence gap map that catalogues the full body of impact evaluation evidence for transferable skills interventions in low- and middle-income countries. The map is built on a framework developed in consultation with key stakeholders. The report documents the methods used for search, screening, and coding studies and examines evidence clusters and gaps identified on the map.

The map reveals a few evidence clusters where synthesis research could be promising, including skills courses inserted in schools and TVET combined with transferable skills training. There is more evidence for the effect of interventions on individual learning and behaviour outcomes than for demographic and employment outcomes. There are significant gaps in evidence for several intervention categories, including teacher training programs and curriculum reform, learner-centred teaching, and institutional management and capacity building.

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